

# **Transportation Asset Management International Scanning Tour**

Canada, New Zealand, Australia and the United Kingdom

April 7 – 24, 2005.

## **Australia – New South Wales – Friday, April 15**

### **Road and Traffic Authority of New South Wales**

#### *Background*

<http://www.rta.nsw.gov.au/> (homepage)

#### *Presentations*

Overview - Paul Forward – Chief Executive

Introduction - Mike Hannon – RTA's Director of Road Network Infrastructure

RTA's Asset Management – Overview, Asset Management and Decision Making, Benchmarking and Benefits/ Impacts of Asset Management - Neil Walker, Martin Nichols, Alan Bastable

#### *Observations*

#### *Issues*

- Aging infrastructure
- Protect what they have
- Raise revenues to support this e.g increase tolls on harbor bridge to support renewal of other roads, use PPP to provide new infrastructure
- Congestion in urban areas
- Pricing important because you can't build your way out of congestion
- Need to deal with freight (relates to road pricing – weight distance tax) and level the playing field between road and rail.
- Security becoming an issue
- Links to planning
- Funding dilemmas
- Business reform process to address overall costs – systems, data etc. (6500 people with a long history – 1800 day labor force)
- Ministerial system of government – revenues from general fund and fees. Issue of corporate governance.
- Treasury requires asset management plans that focuses on looking after what you have.
- Still a large day-labor organization – open to competition
- Need to get efficiencies

- 1000 retirements – 1997 - graduate training program started – 6 assignments over three years including regional NSW, also targeted recruiting
- Need a radical change process with some hard decisions. Being driven by a team.

#### Facts and figures:

- Road Network
  - Arterials and National Highways – 20,500 km (2,900 km of unincorporated roads)
  - 79 km of toll roads (private sector leases corridor)
  - Sub-arterial (Council) – 18,500 km
    - 13500 km sealed, 4800 km unsealed
    - 1500 non-timber bridges, 323 timber bridges
  - Local access (Council) – 142,000 km
    - 30000 km sealed urban, 30000 km sealed non-urban, 82,000 km non-urban unsealed
    - 7600 non-timber bridges, 2,600 timber bridges
- Assets
  - Built Road infrastructure assets
  - Built Utility assets
  - Other corridor assets – heritage assets
  - RTA –
    - 4800 bridges
    - 37 tunnels
    - 3300 signals
    - 42,00 lane km of arterial pavement
    - 750 lane km of unsealed road
    - 200 million sq m of surface
    - 9 vehicular ferries
    - Balance sheet > \$65 b in infrastructure
- Sydney - \$4.1m – greater metropolitan area \$4.8m.
- Councils in NSW – 166
- DIPNR – broad parameters for land use planning and local councils deal with specifics.
- RTA gives grants to local councils (e.g. funding for timber bridges)
- 70% of trips to CBD use public transport
- Major performance based contracting in Sydney
- Many small contracts, and day labor crews can compete
- Funding –
  - Network development \$1148m,
  - Infrastructure maintenance - \$815m (\$100m commonwealth)
  - Road safety etc - \$450 m
  - Traffic and transport - \$219m
  - Debt servicing and repayments – \$145m
  - Other \$82m

### Infrastructure Maintenance

- RTA's 5 –year infrastructure maintenance plan
- Endorsed by NSW Government Asset Management Committee (central committee covering all assets) and by Treasury
- RTA is integrating recurrent maintenance with capital replacement works as an Infrastructure Asset Management approach

RTA's Corporate Planning Vision – a safe, sustainable and efficient road transportaito System

### NSW Government Directions for Asset Management

- Address “past bias towards acquisition of new capital assets at the expense of appropriate asset management.” NSW Budget Paper 4, 2004.
- Maintenance of effort vs expansion of service effort

### Program Governance

- Resource allocation / risk management
- Maintenance of service effort
  - Scale
  - Prioritize - judgment
  - Separate by asset types and triggers
- Expansion of service effort
  - Capacity expansion – prioritized by economic analysis
  - Enhancement of service standards – allocation – risk management / check financial impacts
- Risk Management
  - Standard for Risk Management
  - Use of corporate risk evaluation criteria
  - Network deficiency analysis
  - Possible event scenarios
  - Modernize network
- Strategic Risk management balance
- Private sector accounting assumes that you can withdraw from market at the end of the asset's life. Public sector needs to think about functionality of the asset as it is unlikely to divest of an urban public transport network. Avoid debate on capital vs recurrent issue. NO CAPACITY ENHANCEMENTS.
- Strategy/ Policy
  - Manage infrastructure as a long term renewable asset
  - Integrate Package of Recurrent Maintenance with Capital Renewal to achieve modern standards without increase in functional(mobility) capacity
  - Depends on RTA plan

### Private Sector Asset Management

### *Presentations*

Private Sector Transportation Asset Management

Don Arasakumar and Graham Dicker (Eastern Distributor operations manager) and John Hesketh (Divisional Manager, Leighon Services)

Sydney Harbor tunnel – Marton Marosszeky

### *Observations*

Eastern Distributor is a typical toll road contractual arrangement and stakeholder interests

- Concession Company (with both Equity and Debt) reports to the government (lease of land for 48 years – began in 1997 – 35 years in original concept but 48 years required to recover costs from mitigation measures from the EIS – e.g additional public space, change of location of portals)
- Elements
  - Contractor (D&C deed)
  - Operator (O&M deed)
  - Tolling and Customer Management (TCM deed)

Benefits of Integrated Design, Construction and Maintenance

- Understanding life cycle costs and operational impact of design decisions (value engineering)
- Risk transfer with less contract administration
- Easier transition from construction to operations.

Key features of Maintenance Management

- Use CMMS (Main Pack – Australian Proprietary software – based on frequency and recommendations from manufacturers). Is basically a shell that requires input specific to the system.
- Addresses both company requirements and contractual and legislative requirements
  - Environmental
  - Toll
  - Traffic and Incident
  - Administration
  - Maintenance
  - Safety
- Annual assessment includes roughness and skid resistance – not an issue.
- Includes a criticality index and use the concept of intervention strategies.
- Activities – planned, unplanned, optimization, workflow

Sydney Harbor Tunnel

- Planned approach with budget allocation from the outset
- Joint management of MSF to ensure suitable condition at handover.
- Detailed analysis to identify and qualify risks
- Novel remedial strategies developed rationally to manage risks

- Research works fill the gap in routine knowledge
- State of the art techniques add value to the long-term durability of infrastructure
- Opportunity for TMS similar to BMS and PMS

**M7** – will come on line in a year – Will use an **asset management system** (off the shelf – needs to be configured - CONFIRM from the UK by Southbank Systems).

- Database
  - Classified according to hierarchy and spatially located (3-D construction model)
  - Historic profile of D&C, condition, serviceability, and maintenance inputs
- Works management
  - Initiate inspections
  - Produce and update maintenance program
  - Track work orders
  - Real time mobile capability
- Deterioration modeling
  - Future condition and develop maintenance profiles (life cycle optimization)
  - Condition deterioration of individual assets is calibrated to actual historical profiles
  - Asset condition is assessed on regular basis and reset after remedial works
- Reporting
  - Asset condition, status of inspections and maintenance
  - Real time KPI monitoring
  - Proof of compliance and duty of care

Budget includes purchase of software, personnel line for asset manager/ engineer, data will be

## **Austroads**

### *Background*

<http://www.austroads.com.au/> (homepage)

[www.austroads.com.au/asset/index.html](http://www.austroads.com.au/asset/index.html)

Austroads Strategic Plan 2004-2007

[http://www.austroads.com.au/pdf/Austroads\\_Strategic\\_Plan.pdf](http://www.austroads.com.au/pdf/Austroads_Strategic_Plan.pdf)

### *Presentations*

Murray Kidnie – Austroads

Ron Ferguson - RTA

### *Observations*

Strategic research priorities

- Minimizing whole of life cost of road assets
- Addressing the future freight task
- Optimizing utilization of the road network

- Enhancing the security and integrity of information (driver and vehicles)
- Improving road safety

#### Asset management

- One of five strategic priorities
- One of nine publication series
- Assets task force
- Special section of website
- Area where technical research capacity is to be maintained with ARRB
- Definitions – Road asset management is a structure approach to the delivery of community benefits.
- Strategies
  - Scope – see diagram
  - Life cycle approach to AM
  - Flow process diagram (adopted by Queensland MR)
  - Austroads strategic plan (2004-2007)
    - Key themes
      - Optimal LOS
      - Road User requirements
      - Monitoring and Performance
      - Capital investment
    - Strategic research program
    - Technical research program
      - Pavement remaining life
      - Management of road surface characteristics
      - Salinity and pavements
    - Publication series
      - Introduction to Asset Management – PEAK document – July
      - Stakeholder / Community requirements
      - Asset Strategies
      - Program Development and Implementation
      - Asset Performance
      - Asset Valuation and Audit

## *Pictures*



Denis Merida, Larry Velasquez, Paul Wells, Dave Geiger, Don Tuggle and Patricia Bugas-Schramm listen to presentations at the RTA



Paul Forward – Chief Executive RTA



Murray Kidnie - Austroads



Neil Walker (although the name card says otherwise!) – RTA

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